

REMARKS

Claim 3 was rejected under 35 USC 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention. In particular, the Examiner states that claim 3 does not depend on any other claim. Claim 3 has now been amended to be dependent on claim 1.

Claims 1-8 were rejected under 35 USC 103(a) as being unpatentable over Iida et al (US Patent No. 5,655,026) in view of Hayden, Sr. (US Patent No. 4,258,084). The Examiner alleges that since Iida is concerned with inner surfaces of bearings into which a piston pin would connect that it would have been obvious to one of ordinary skill in the art at the time the invention to have modified the inner surfaces of the piston head pin hole of Iida et al with indentation as well to strengthen the surfaces. Further the Examiner alleges that it would have been obvious to one have ordinary skill in the art at the time that the invention was made to make the shot peening indentation of Iida et al circular so as to provide a piston head pin hole with a stronger inner pin hole surface with a good lubricant retention.

Regarding claims 3 and 5 the Examiner alleges that it would be obvious to one having ordinary skill in the art at the time the invention was made to have made the short peened indentations of Iida to have a definite grain so as to provide a large number of depressions as taught by Hayden. With regard to claim 4, the Examiner alleges that both Iida and Hayden disclose a blasting medium which is a shot peening medium. And further with regard to claim 6, the Examiner alleges that Hayden discloses shot peening the pin hole surfaces with a blasting medium at a velocity so that the blasting medium creates the indentations upon impact without penetrating the material of the pin hole surfaces.

The rejection of the claims is traversed. The state of the art regarding piston pin holes is that the pin holes have a smooth surface. To overcome the seizing up of the pin in the pin hole usually a smooth feed bushing is inserted between the pin and the pin hole, whereby the bushing is made from another material different than the pin and the pin hole.

Iida is not concerned or related with a piston pin hole. Further Hayden is also not concerned with a piston pin hole. In contrast Hayden is concerned with the surface of a cylinder

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wall in an internal combustion engine. The Examiner has not show any art relating to the piston pin. Nor has the Examiner shown any prior art to suggest the method of improving the piston pin hole by shot peening.

The entire state of the art regarding piston pin holes provides no suggestion to machining the surface of the pin hole by using shot peening to optimize the number of craters or oil retaining volume of the sliding surface. The affect to have a supporting oil film between the surface of the pin hole and the surface of a piston pin is new over the state of art. The intent as stated in Hayden to have an oil film to reduce fuel or oil consumption is irrelevant to the present invention. Shot peening the surface of the piston pin hole and having a supporting oil film in the present invention is not intended to reduce fuel or oil consumption. Therefore, there is no motivation to combine the Hayden disclosure with the Iida disclosure. Further the present invention, and especially in claim 1, an inventive feature is provided to the industry which includes using shot peening in the area of piston pin hole, whereby after the shot peening, the piston pin holes have a plurality of crater shaped indentations. These features are not shown or disclosed in the prior art.

Further, in paragraph 10 of the Office Action the Examiner states that Iida and Hayden are analogous art because both patents disclose methods of improving surfaces of engine components. This statement is overly broad. It appears that the Examiner believes that shot peening can obviously be used to improve any engine component. Engine components vary greatly from cylinder heads to air intake systems to emission components to name a few. It is improper to suggest that an improvement to one engine component would obviously be an improvement on another engine component.

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Therefore claims 1 and 3-8 are believed to be allowable. This amendment should place this case in condition for passing to issue. Such action is requested. If the Examiner feels that prosecution of the present application can be expedited by way of an Examiner's amendment, the Examiner is invited to contact the Applicant's attorney at the telephone number listed below.

Respectfully submitted,

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